



COPY

corners. The purpose is to provide cuts-outs in the shielding, near concave corners, which allow enough light to define the edges along the high modulation orientation, causing better line-definition in the concave corners. The final step (Step 280) in this approach is to apply fine biasing along the critical high modulation orientations for each mask. The horizontal mask will have fine biasing treatment along the horizontal edges and the vertical mask will have the fine biasing along the vertical edges.

Currently known techniques for generating the horizontal and vertical masks do not always produce optimal results when attempting to generate such masks for complex structures. For example, utilizing known techniques such as the one disclosed in the flowchart of Fig. 2, it is sometimes difficult, for example, to provide proper shielding for complex structures, such as, "jogs" (i.e., short changes in either the vertical or horizontal direction, for example, a short vertical step, between two long horizontal lines), short "S" turns and/or U-shaped patterns in the design. Moreover, it is sometimes difficult to determine whether or not a given structure of the target design should be treated as a horizontal structure or a vertical structure when initially generating the horizontal and vertical masks. As a result, it was often necessary to have an experienced mask designer involved with the generation of the horizontal and vertical masks for addressing and rectifying the foregoing issues in order to generate acceptable mask designs.

Accordingly, there exists a need for a method which allows for the generation of both horizontal and vertical masks utilized in conjunction with double dipole imaging, which eliminates the issues and disadvantages associated with prior art techniques for generating horizontal and vertical masks.

### **Summary Of The Invention**

In an effort to solve the foregoing needs, it is one object of the present invention to provide a method for generating the horizontal and vertical masks for performing dipole illumination which